

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A photodetector comprising:
at least one electron transporting organic material; and
at least one hole transporting organic material,
wherein said at least one electron transporting organic material has an ionization potential
of ~~more than 5.5~~ 5.8 eV or more,

wherein said ionization potential of said at least one electron transporting organic
material is larger than an energy necessary for the highest-level electron of said at least one hole
transporting organic material to be taken out to a vacuum infinite far point,

wherein said ionization potential of said at least one electron transporting organic
material is larger than an ionization potential of said at least one hole transporting organic
material by 0.6 eV or more, and

wherein said at least one electron transporting organic material is a compound
represented by formula (I):

Formula (I)



wherein m represents an integer of 2 or more;

L represents a linking group; and

each of A's independently represents a hetero ring group where at least two aromatic hetero rings are condensed to each other, and A's are the same or different.

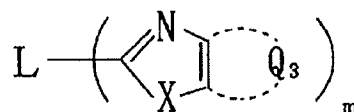
2-3. (canceled).

4. (currently amended): The photodetector according to claim 1,
wherein the ionization potential of said at least one electron transporting organic material is ~~more than~~ 6.0 eV or more.

5. (canceled).

6. (previously presented): The photodetector according to claim 1,
wherein said at least one electron transporting organic material is a compound represented by formula (III):

Formula (III)



wherein m represents an integer of 2 or more;

L represents a linking group;

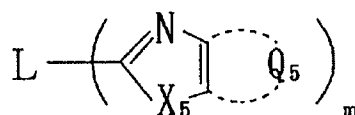
each of X's independently represents O, S, Se, Te or N-R;

R represents a hydrogen atom, an aliphatic hydrocarbon group, an aryl group or a hetero ring group; and

each of Q₃'s independently represents an atomic group necessary for forming an aromatic hetero ring.

7. (previously presented): The photodetector according to claim 1,
wherein said at least one electron transporting organic material is a compound
represented by formula (V):

Formula (V)



wherein m represents an integer of 2 or more;

L represents a linking group;

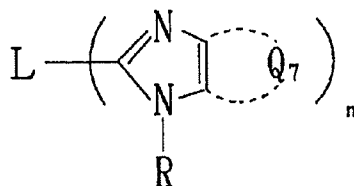
each of X₅'s independently represents O, S or N-R;

R represents a hydrogen atom, an aliphatic hydrocarbon group, an aryl group or a hetero ring group; and

each of Q₅'s independently represents an atomic group necessary for forming a 6-membered nitrogen-containing aromatic hetero ring.

8. (previously presented): The photodetector according to claim 1,
wherein said at least one electron transporting organic material is a compound
represented by formula (VII):

Formula (VII)



wherein *n* represents an integer of 2 to 8;

L represents a linking group;

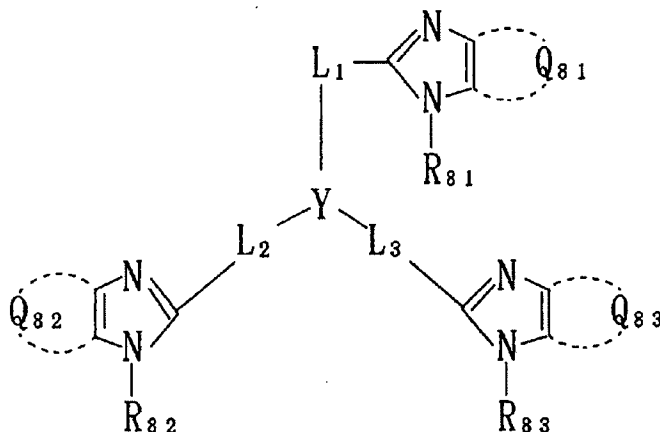
each of R's independently represents a hydrogen atom, an aliphatic hydrocarbon group, an aryl group or a hetero ring group; and

each of Q₇'s independently represents an atomic group necessary for forming a 6-membered nitrogen-containing aromatic hetero ring.

9. (previously presented): The photodetector according to claim 1,

wherein said at least one electron transporting organic material is a compound represented by formula (VIII):

Formula (VIII)



wherein Q_{81} , Q_{82} and Q_{83} each independently represents an atomic group necessary for forming a 6-membered nitrogen-containing aromatic hetero ring;

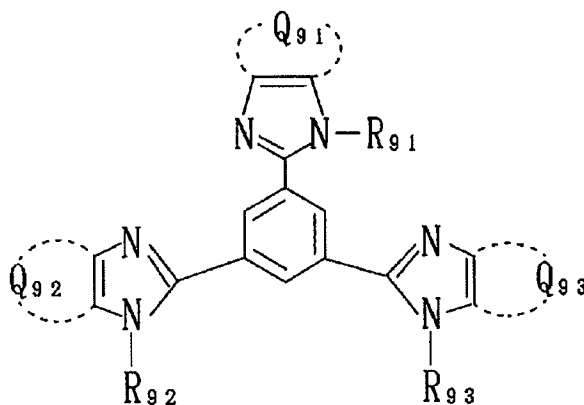
R_{81} , R_{82} and R_{83} each independently represents a hydrogen atom, an aliphatic hydrocarbon group, an aryl group or a hetero ring group;

L_1 , L_2 and L_3 each independently represents a linking group; and

Y represents a nitrogen atom or a 1,3,5-benzenetriyl group.

10. (previously presented): The photodetector according to claim 1,
wherein said at least one electron transporting organic material is a compound represented by formula (IX):

Formula (IX)



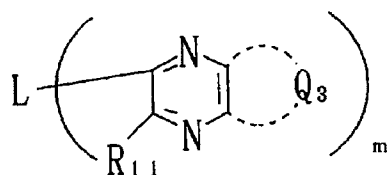
wherein Q_{91} , Q_{92} and Q_{93} each independently represents an atomic group necessary for forming a 6-membered nitrogen-containing aromatic hetero ring; and

R_{91} , R_{92} and R_{93} each independently represents a hydrogen atom, an aliphatic hydrocarbon group, an aryl group or a hetero ring group.

11. (previously presented): The photodetector according to claim 1,

wherein said at least one electron transporting organic material is a compound represented by formula (XI):

Formula (XI)



wherein m represents an integer of 2 or more;

L represents a linking group;

each of Q₃'s independently represents an atomic group necessary for forming an aromatic hetero ring group; and

each of R₁₁'s independently represents a hydrogen atom or a substituent.

12. (previously presented): The photodetector according to claim 1, further comprising:

at least one transparent electrode; and

at least one electrode,

wherein said at least one electron transporting organic material is interposed between said at least one transparent electrode and said at least one electrode.

13. (previously presented): The photodetector according to claim 1, further comprising:

at least one transparent electrode; and

at least one electrode,

wherein said at least one electron transporting organic material and said at least one hole transporting material are interposed between said at least one transparent electrode and said at least one electrode.

14. (previously presented): The photodetector according to claim 3, further comprising:
at least one transparent electrode; and
at least one electrode,

wherein said at least one electron transporting organic material and said at least one hole transporting organic material are interposed between said at least one transparent electrode and said at least one electrode.

15. (previously presented): The photodetector according to claim 1,
wherein said at least one electron transporting organic material is deposited in vacuum.

16. (previously presented): The photodetector according to claim 3,
wherein at least one of said at least one electron transporting organic material and said at least one hole transporting organic material is deposited in vacuum.

17. (previously presented): An imaging device comprising a photodetector according to claim 1.

18. (original): The imaging device according to claim 17, further comprising:
a substrate;

a first layer comprising a first photodetector; and
a second layer comprising a second photodetector.

19. (original): The imaging device according to claim 17, further comprising:

a substrate;

a first layer comprising a first photodetector;

a second layer comprising a second photodetector; and

a third layer comprising a third photodetector.

20. (original): The imaging device according to claim 19,

wherein the first photodetector comprises a blue light photodetector; the second photodetector comprises a green light photodetector; and the third photodetector comprises a red light photodetector.